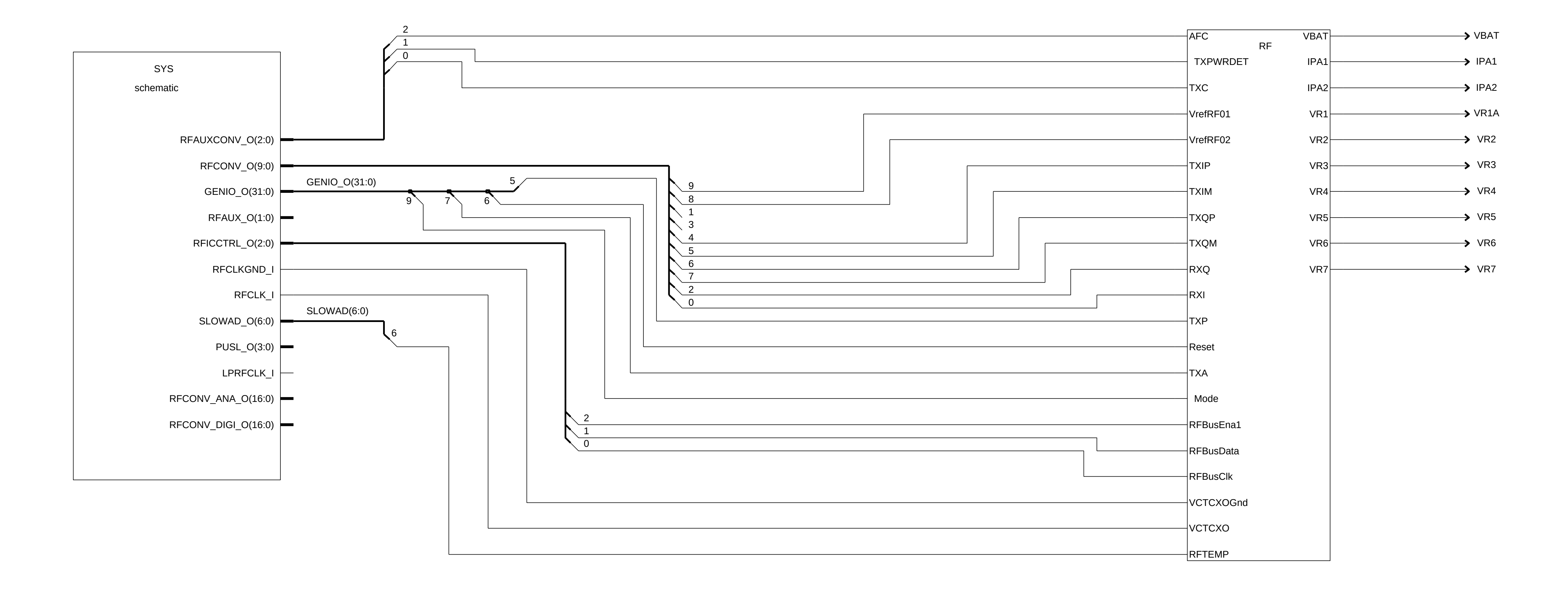
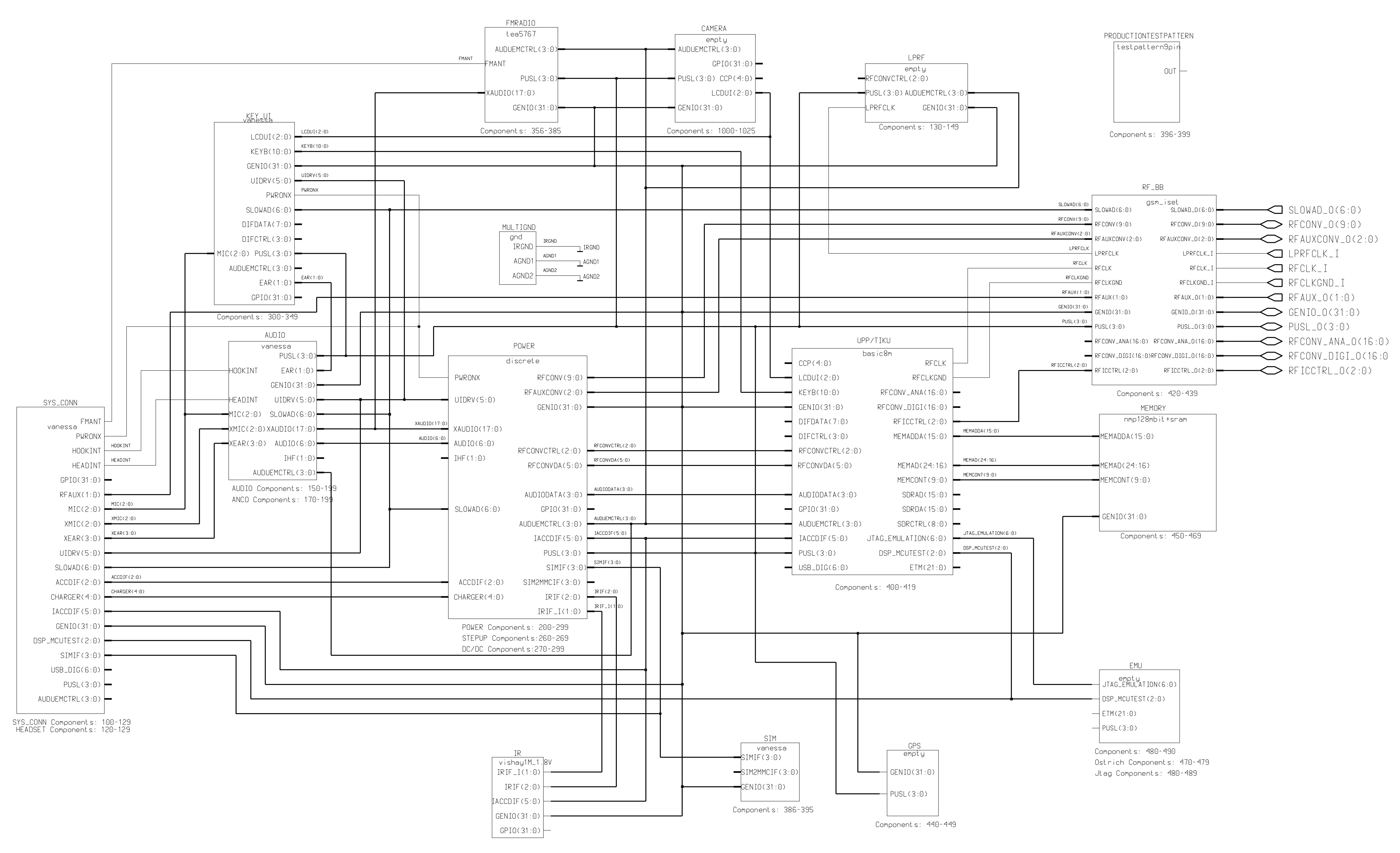
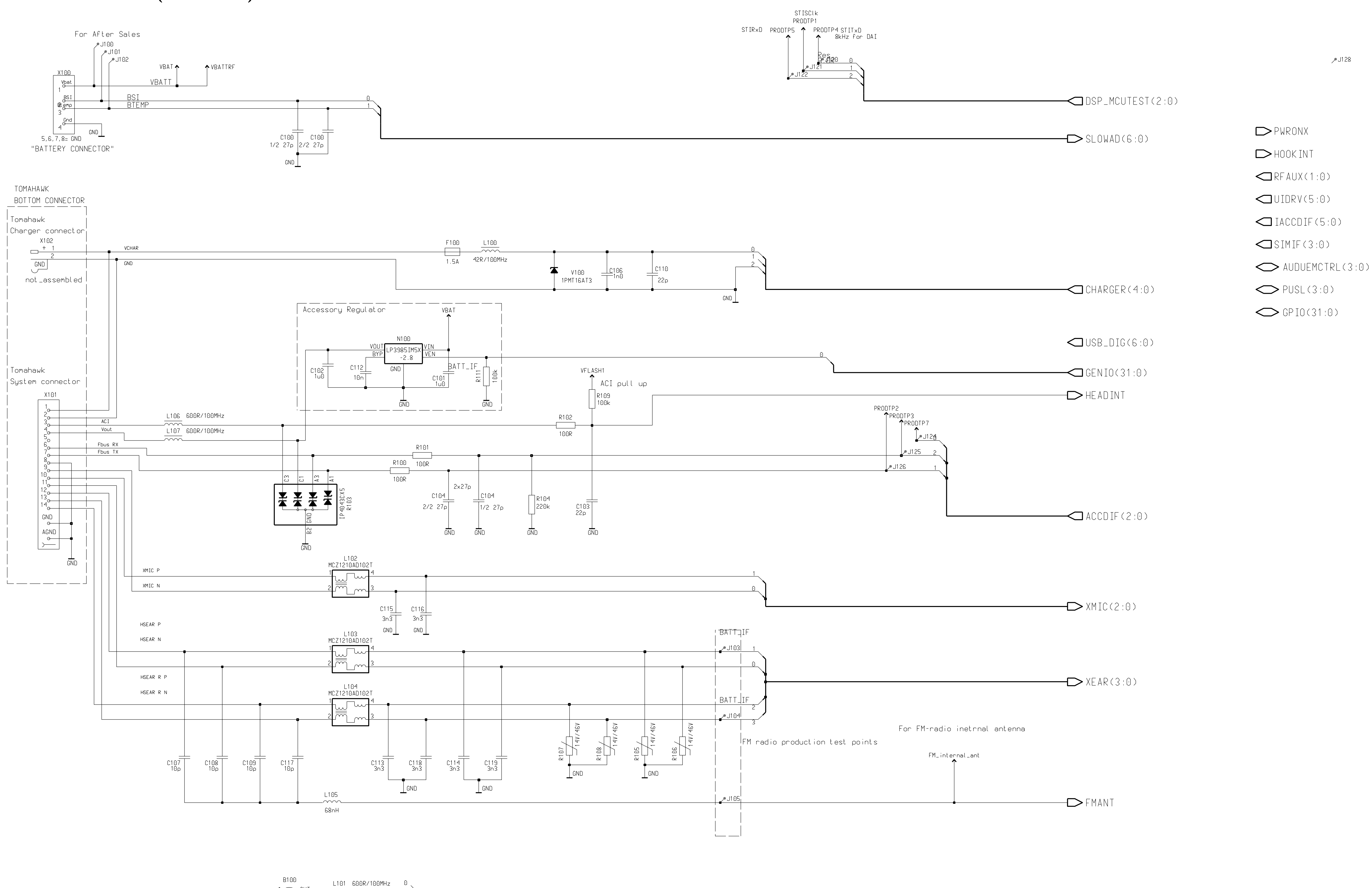
**Block diagram 1 (ver.0.0 ed.4)**



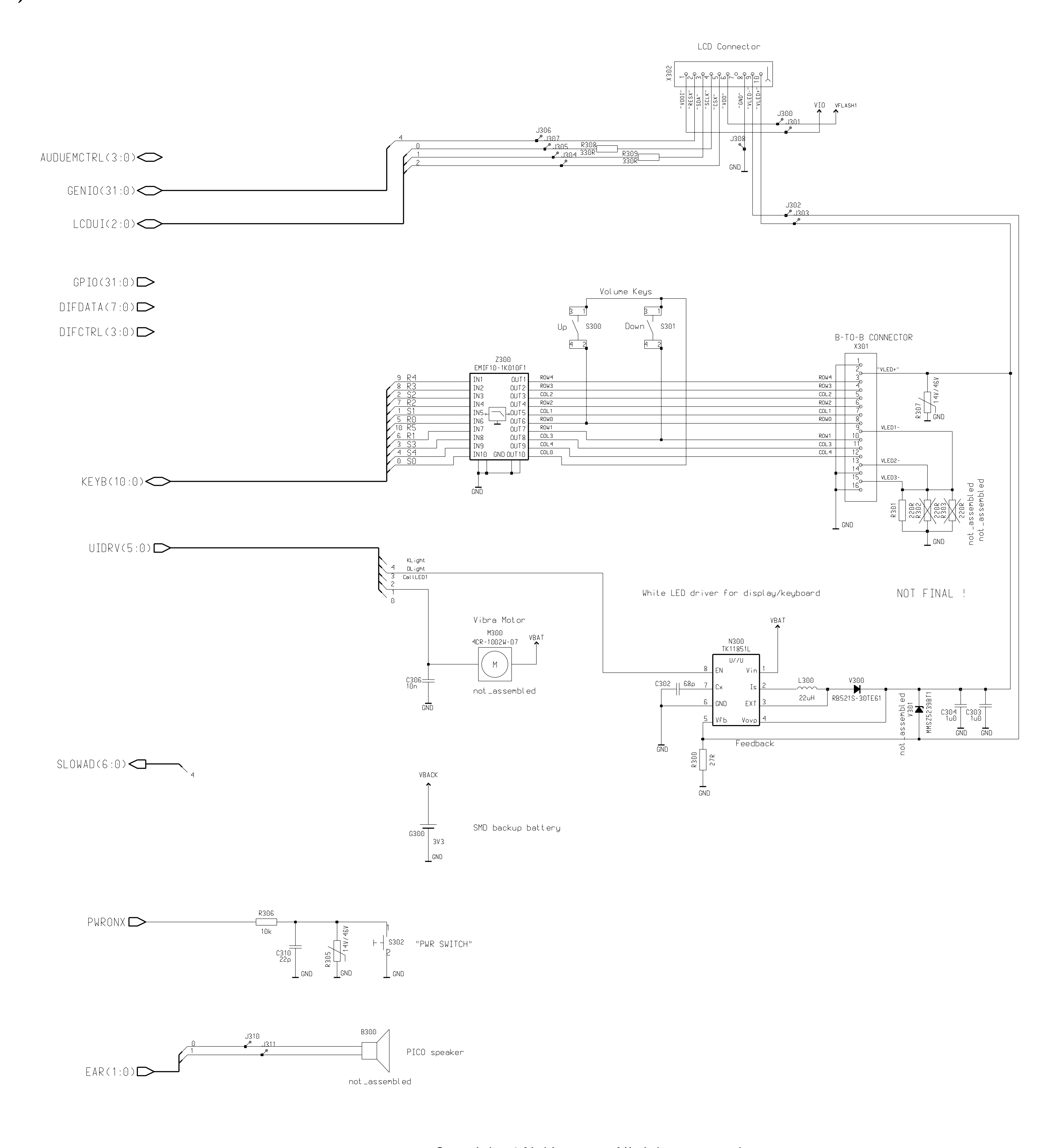
**Block Diagram 2 (ver. 0 ed. 275)**



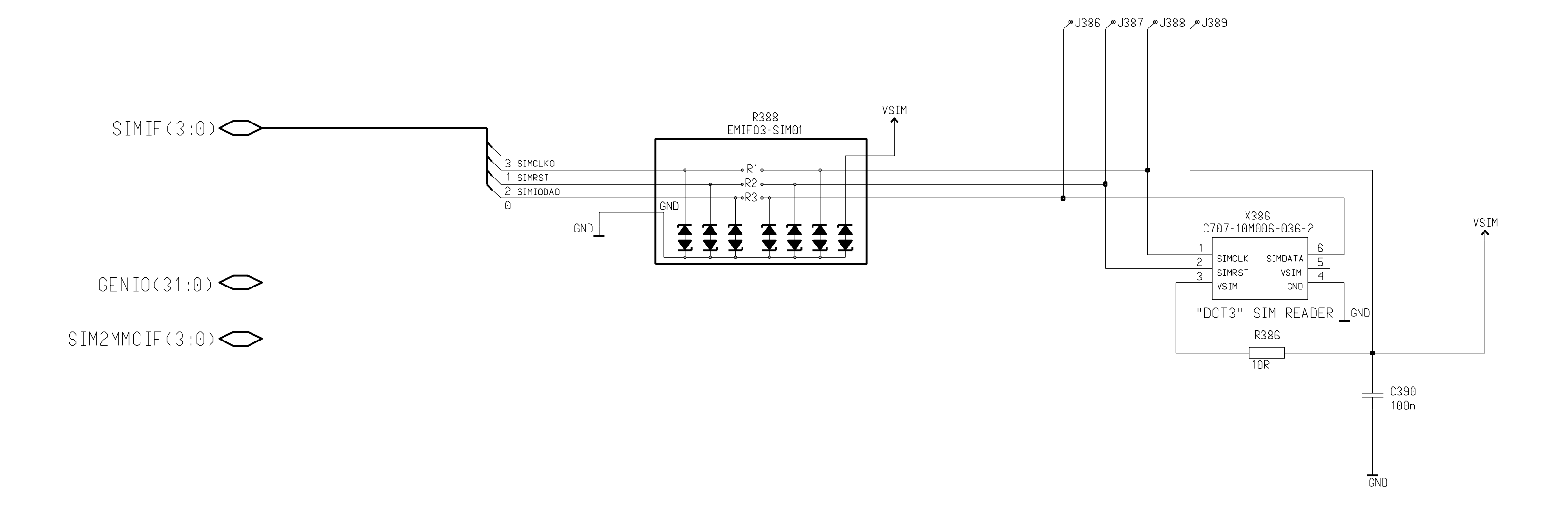
**System connector/baseband (ver.0.0 ed. 51)**



**User Interface (ver. 0.0 ed. 53)**

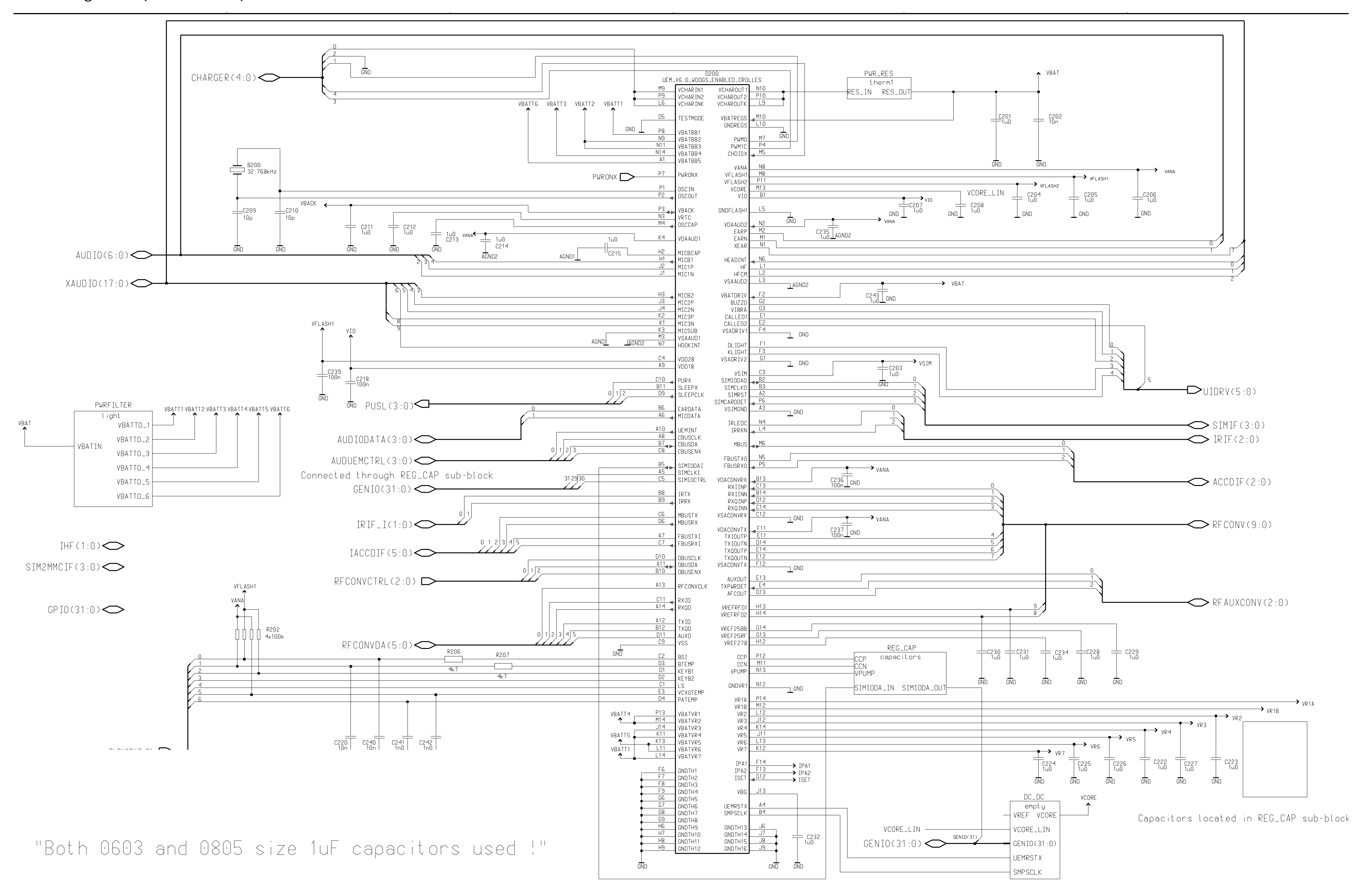


**SIM reader (ver.0.0 ed. 15)**



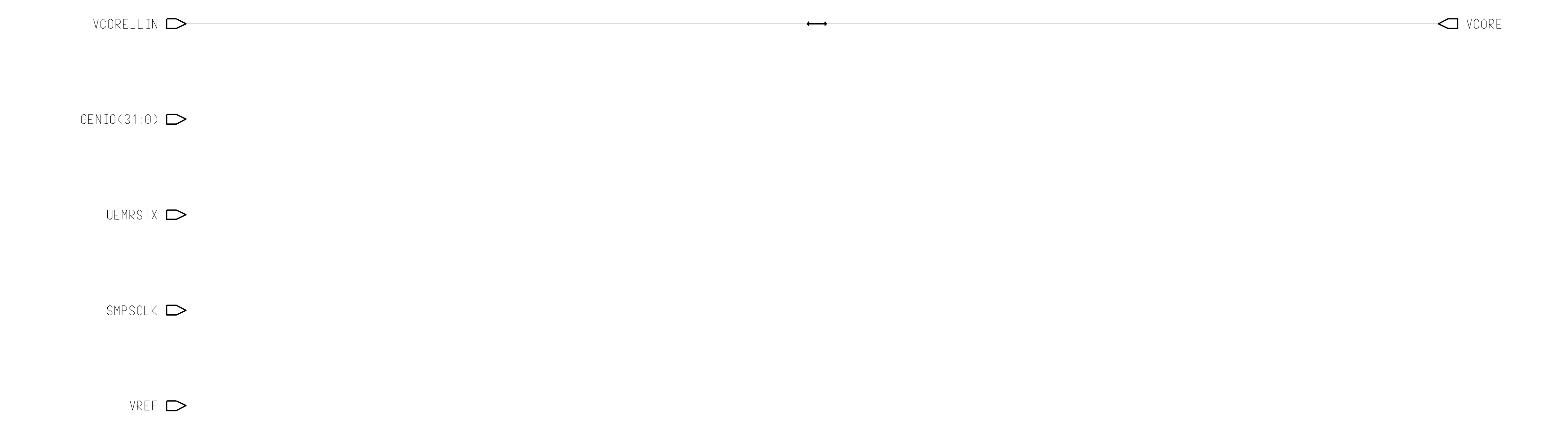

  

**Power management (ver. 1.3 ed. 106)**

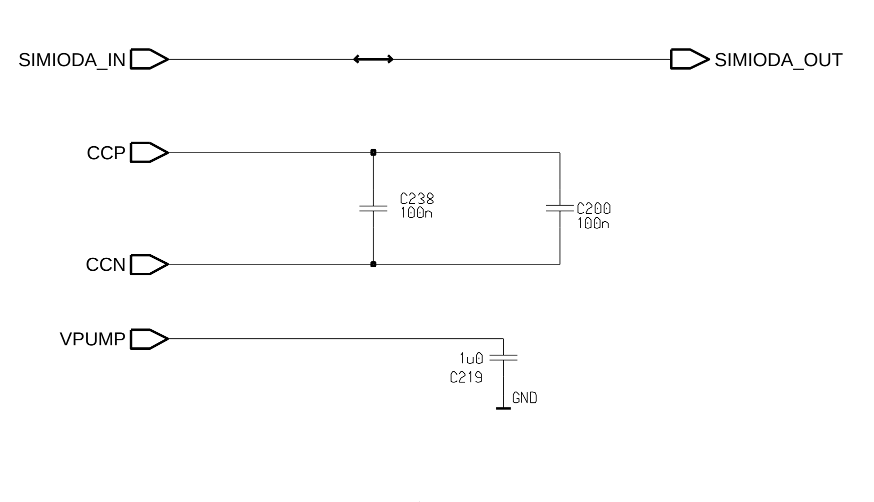


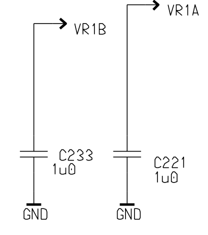

**User Interface**

**DC/DC converter (ed. 0.0 ver.8)**



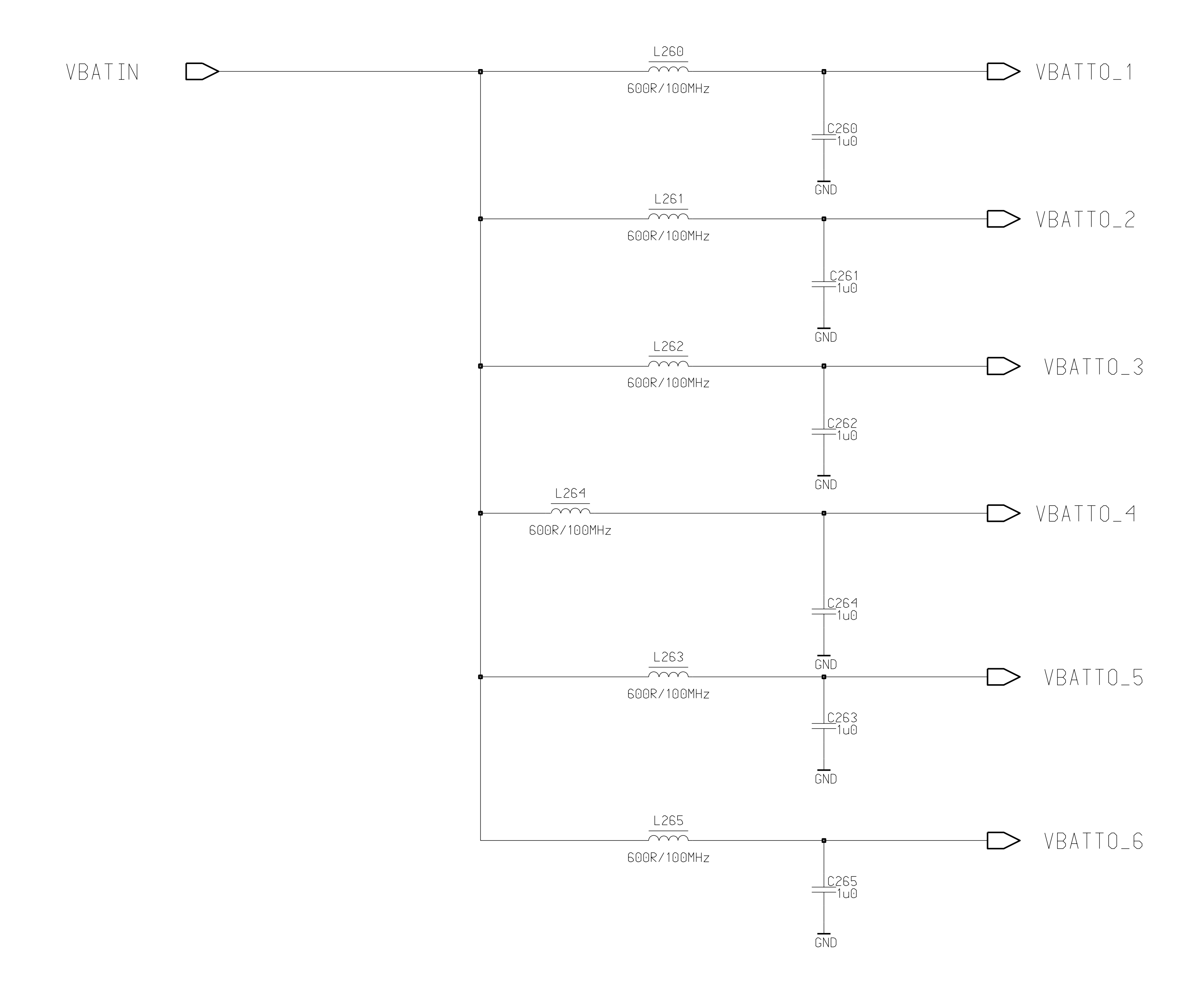
**Old power discrete (ver. 0 ed.7)**



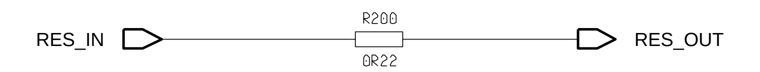



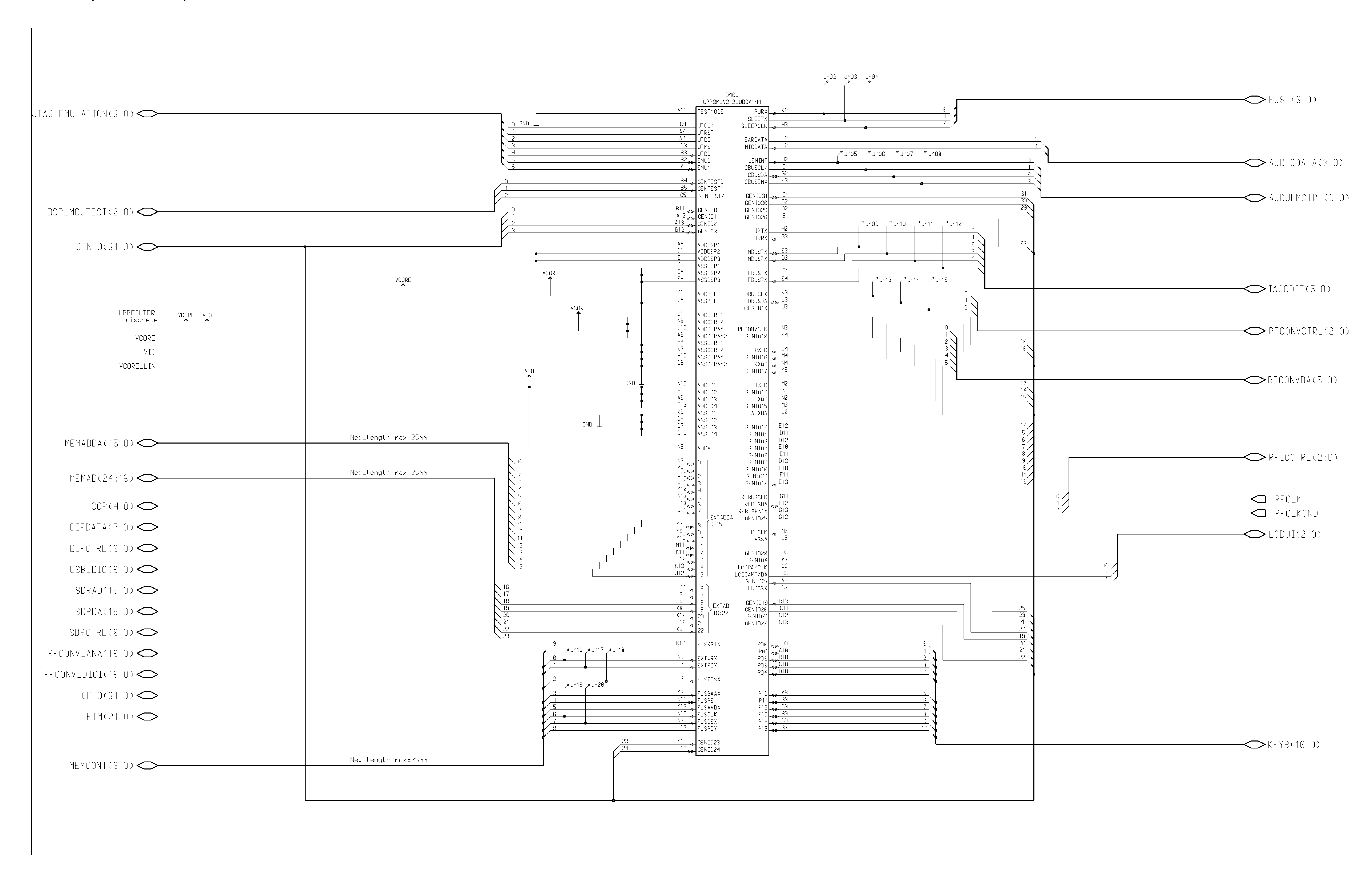
**Light filtering (ed. 2.0 ver 27)**



## Power thermal resistor

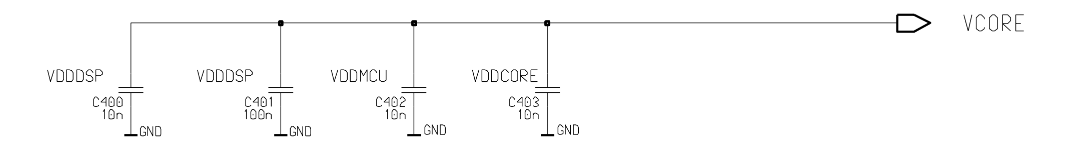


**UPP_8M (ed. 2.0 ver. 101)**

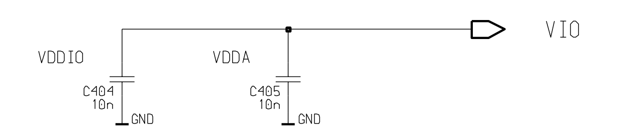


**UPP decoupling capacitors (ed.1.3 ver. 9)**

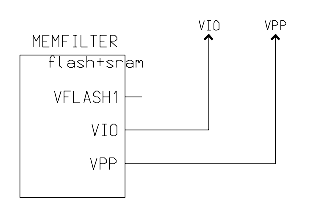



VCORE_LIN



**Flash (ed. 2.0 ver.28)**

***NOTE !!***
***USE nmp128mbit_54mhz***




GENIO(31:0)
MEMAD(24:16)
MEMADDA(15:0)
MEMCONT(9:0)

MEMWING empty
GENIO(31:0)
MEMAD(24:16)
MEMADDA(15:0)
MEMCONT(9:0)
FLS2CSX
FLSCSX

D450
NMP_DCT4_128Mbit_54MHz
FLASHM 8Mx16

D452
K6F4008R2E
SRAM 512Kx8

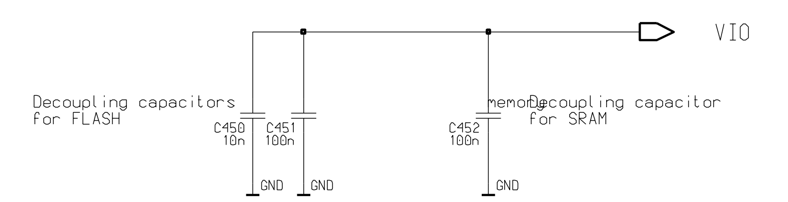
R450 4k7
VPP
PRODTP6
E450

A5=VIO
B1,D8=VIO
A7=VPP
A3,C1=GND
B10,D3=GND

E1,D6=VIO
D1,E6=GND

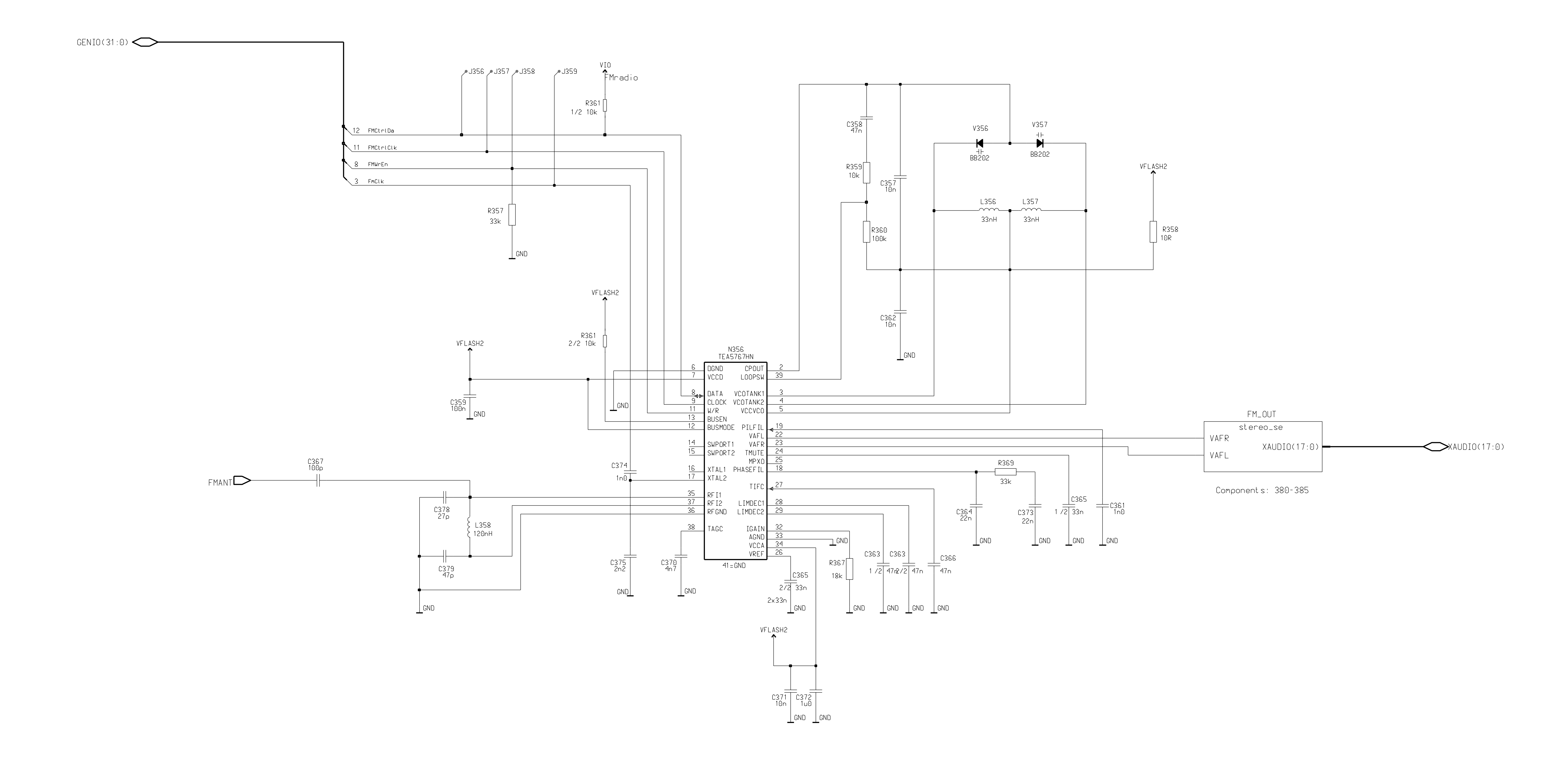
**Flash decoupling capacitors (ver. 2.0 ed.4)**

VFLASH1



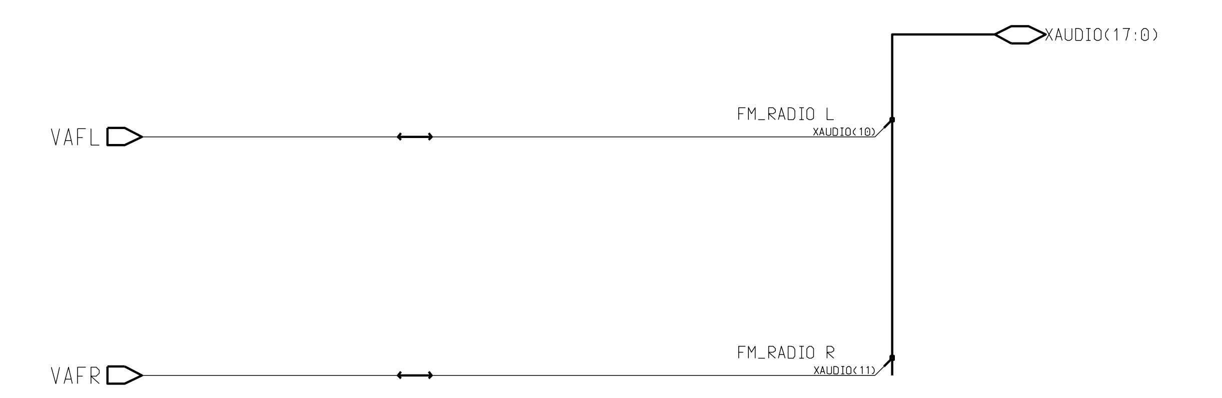



**FM radio IC (ver.1.3 ed 145)**



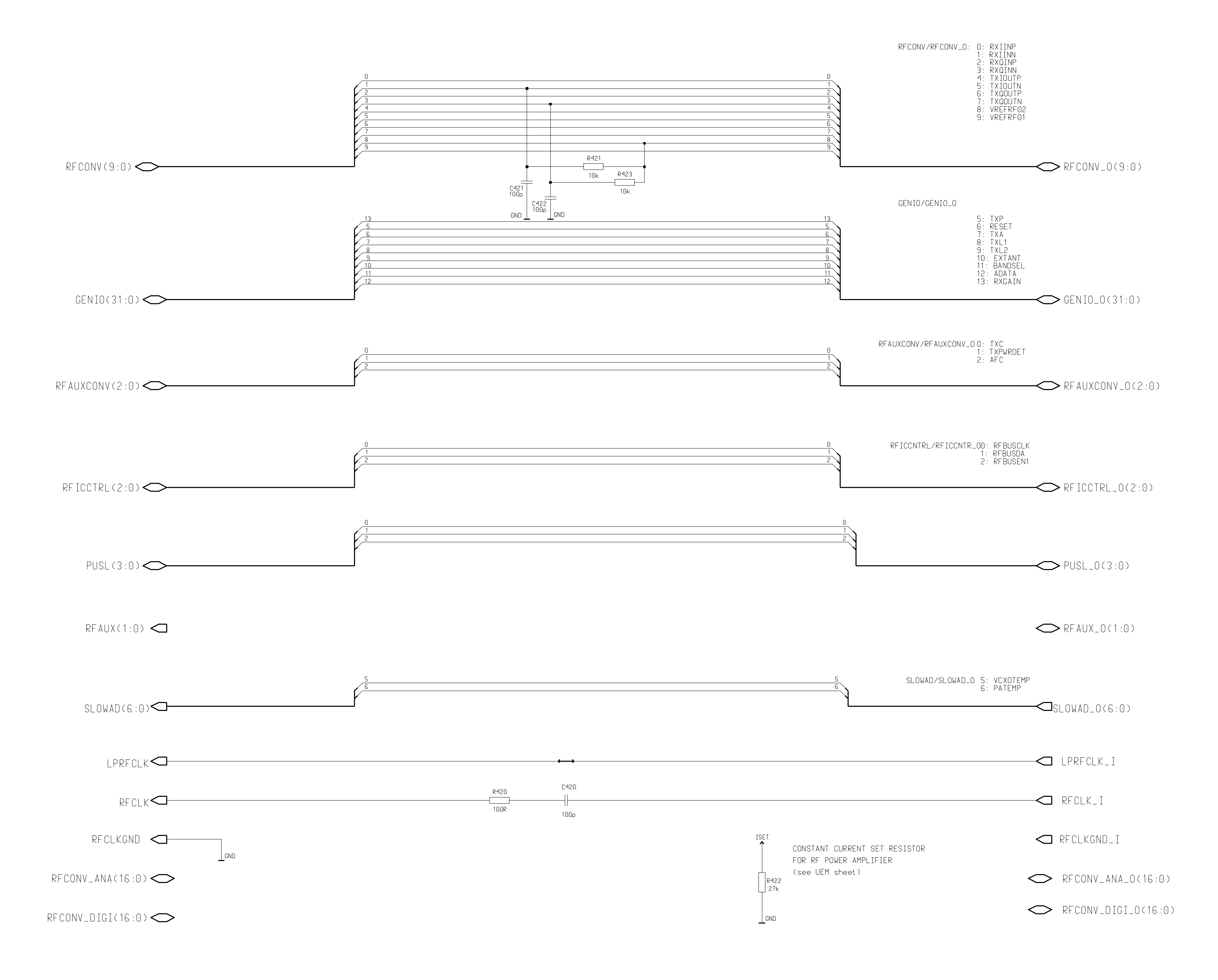
  

**FM radio unit (Ver. 0.0 ed. 117)**

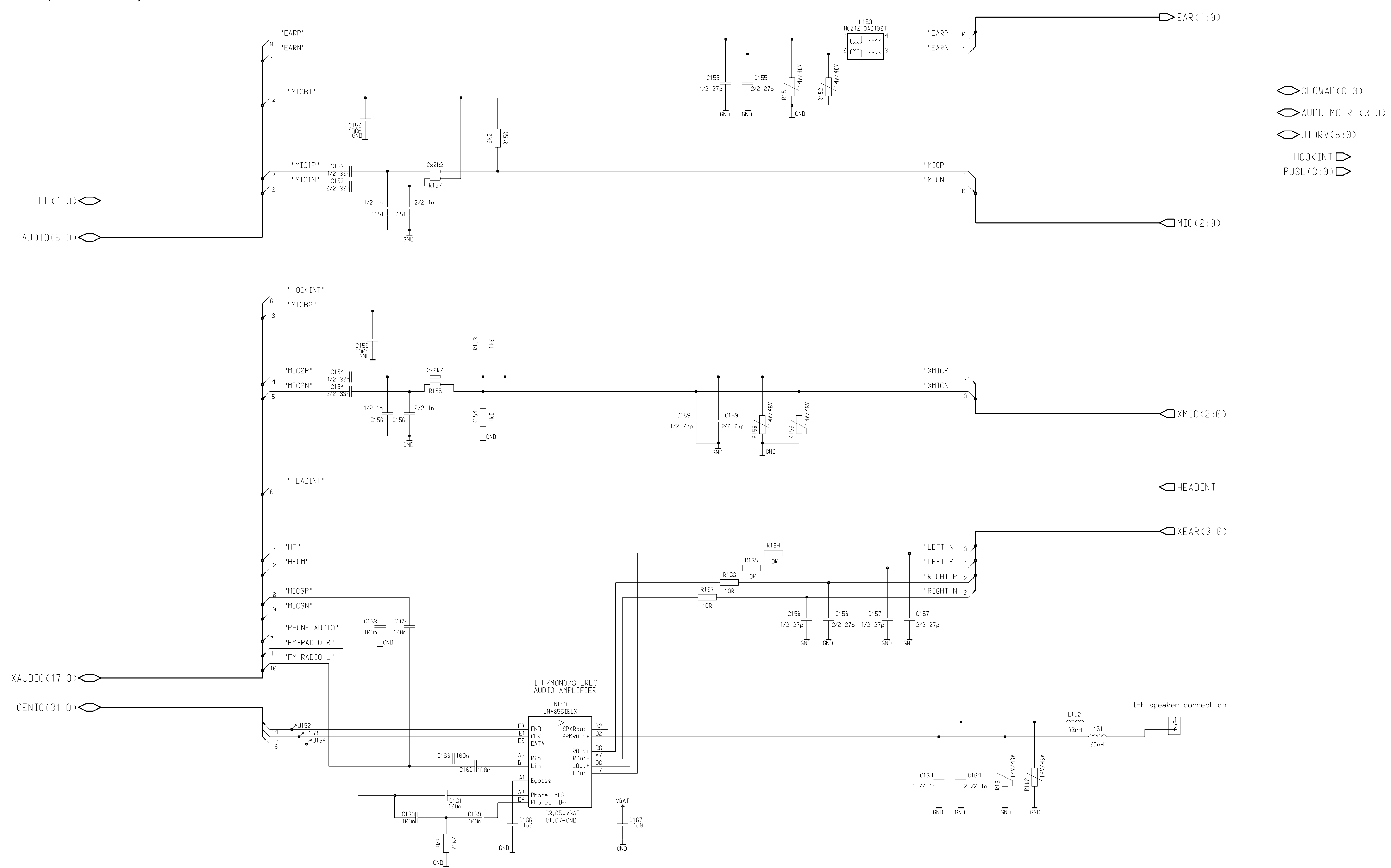


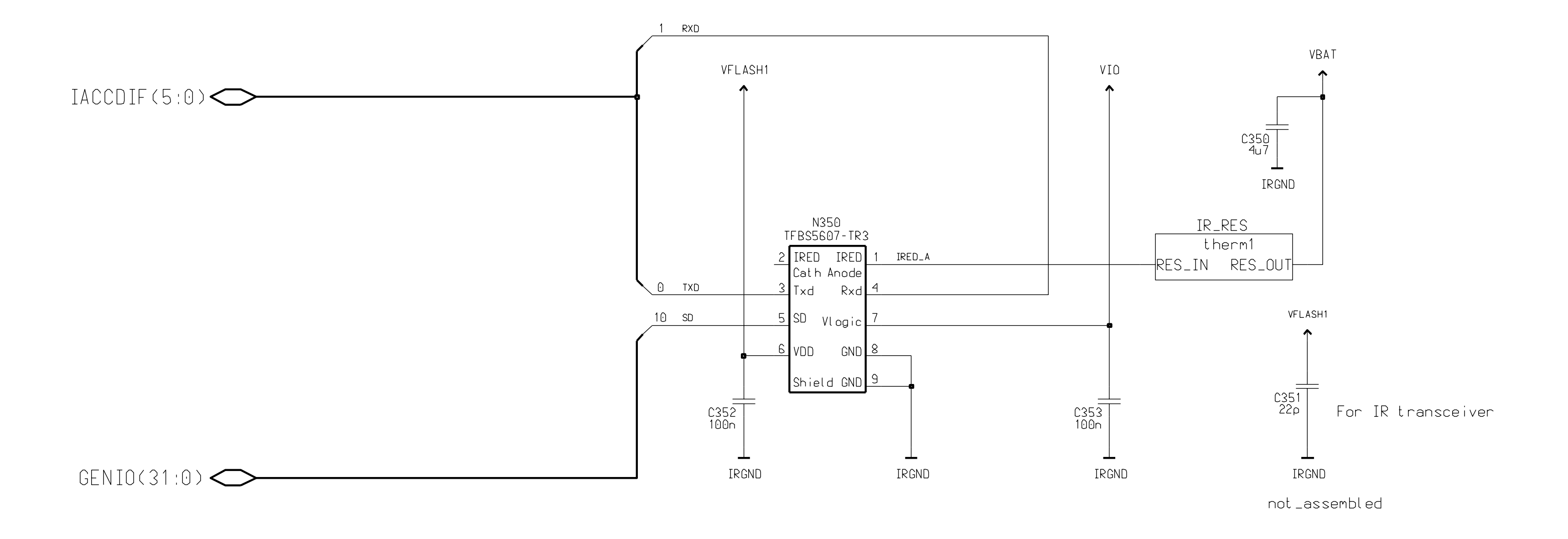
**RF/BB interface (ver. 1.3 ed. 40)**



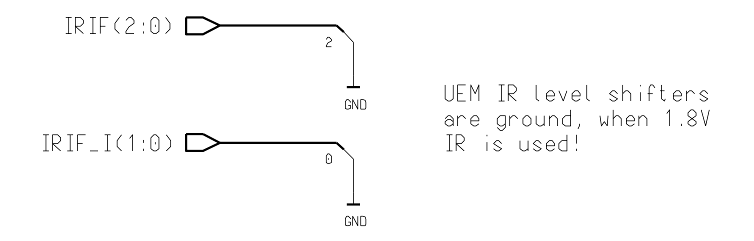
**Audio (ver. 0.0 ed. 41)**



**IR (Ver. 0.0 ed. 32)**



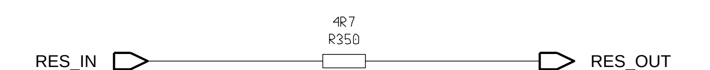

GPIO(31:0)




Used referenses

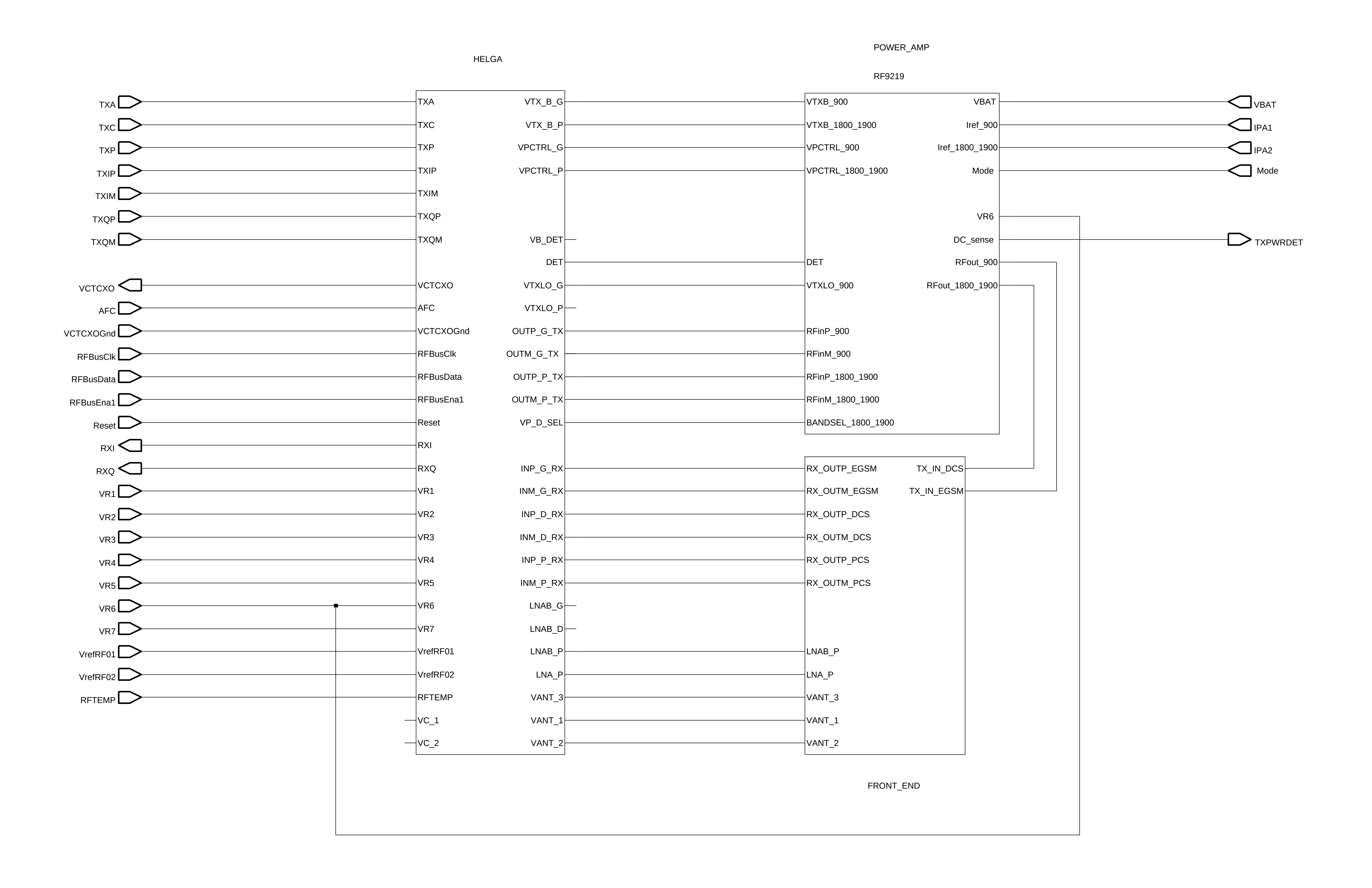
C 350 - 353
N 350
R 350

**IR thermal resistor (ver. 0.0 ed. 5)**



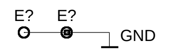

  

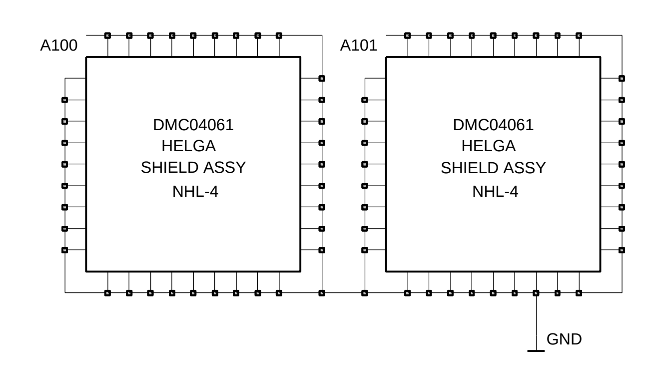
## RF Block Diagram (ver. 0.0 ed.5)

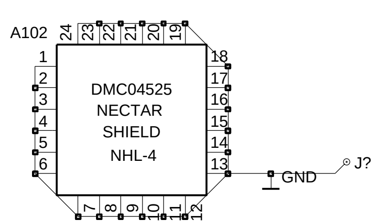


**RF shields (ver. 0.0 ed.6)**

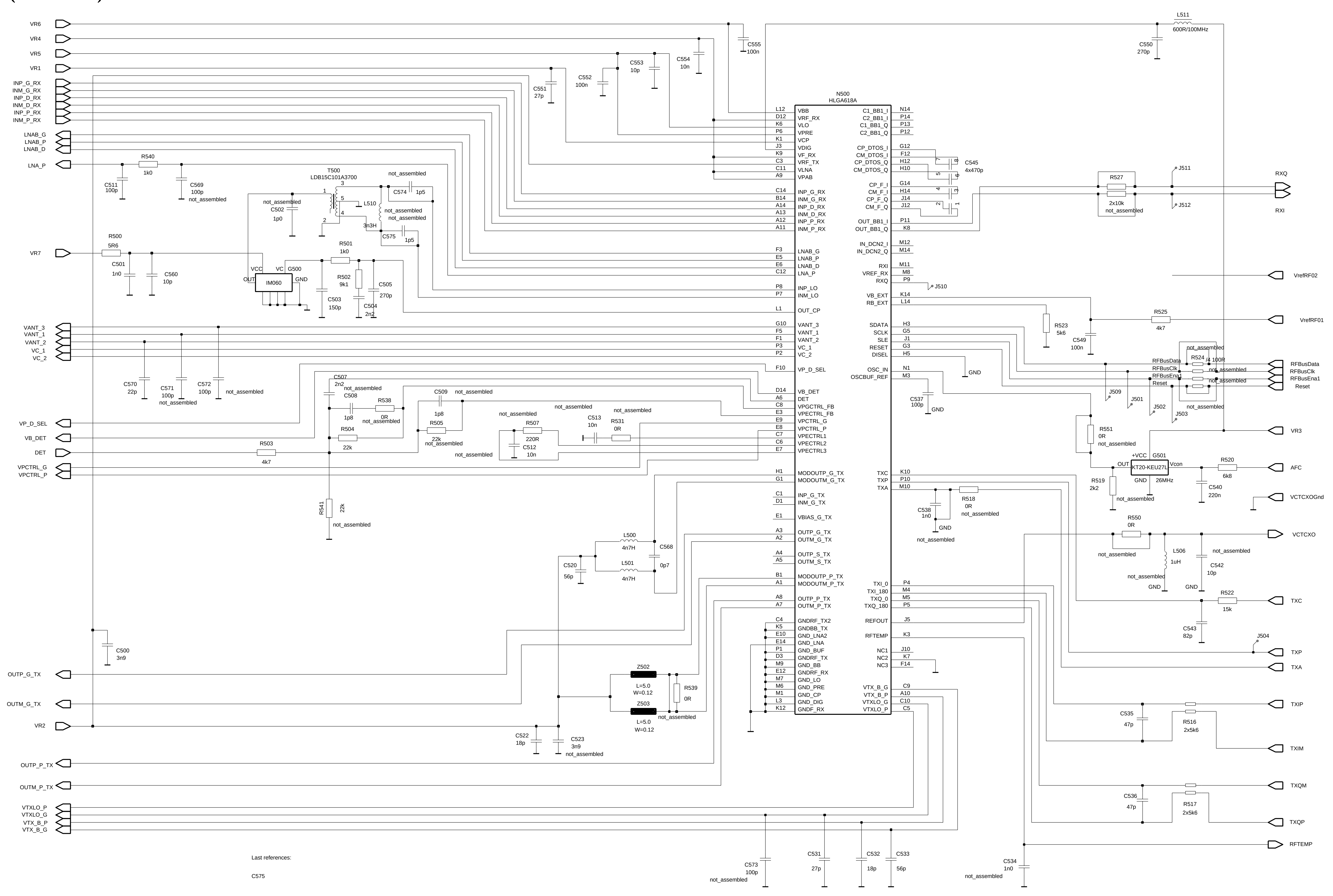
BB GLOBAL GND HOLES



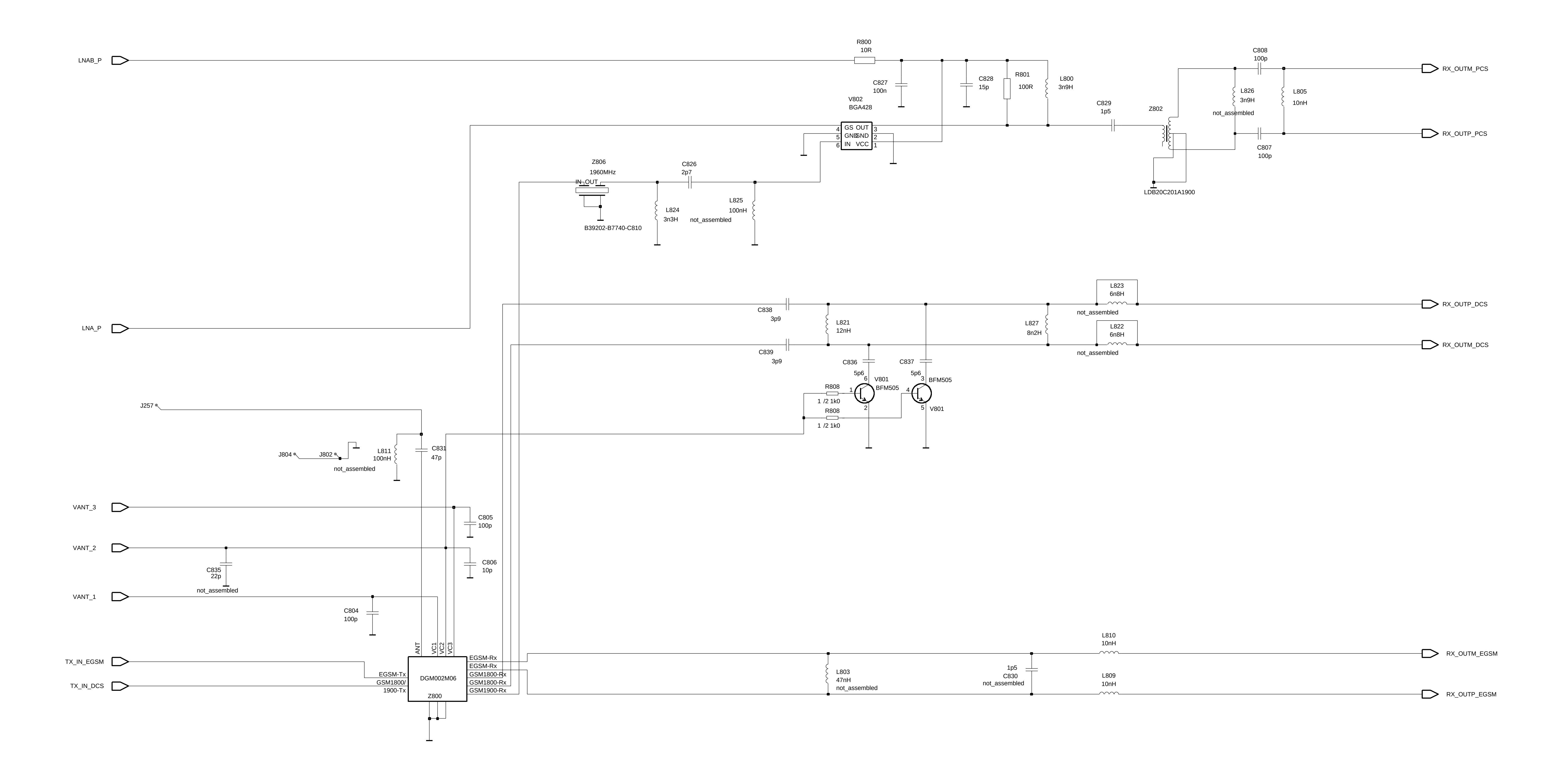



## RF IC HELGA (ver. 0.0 ed.2)

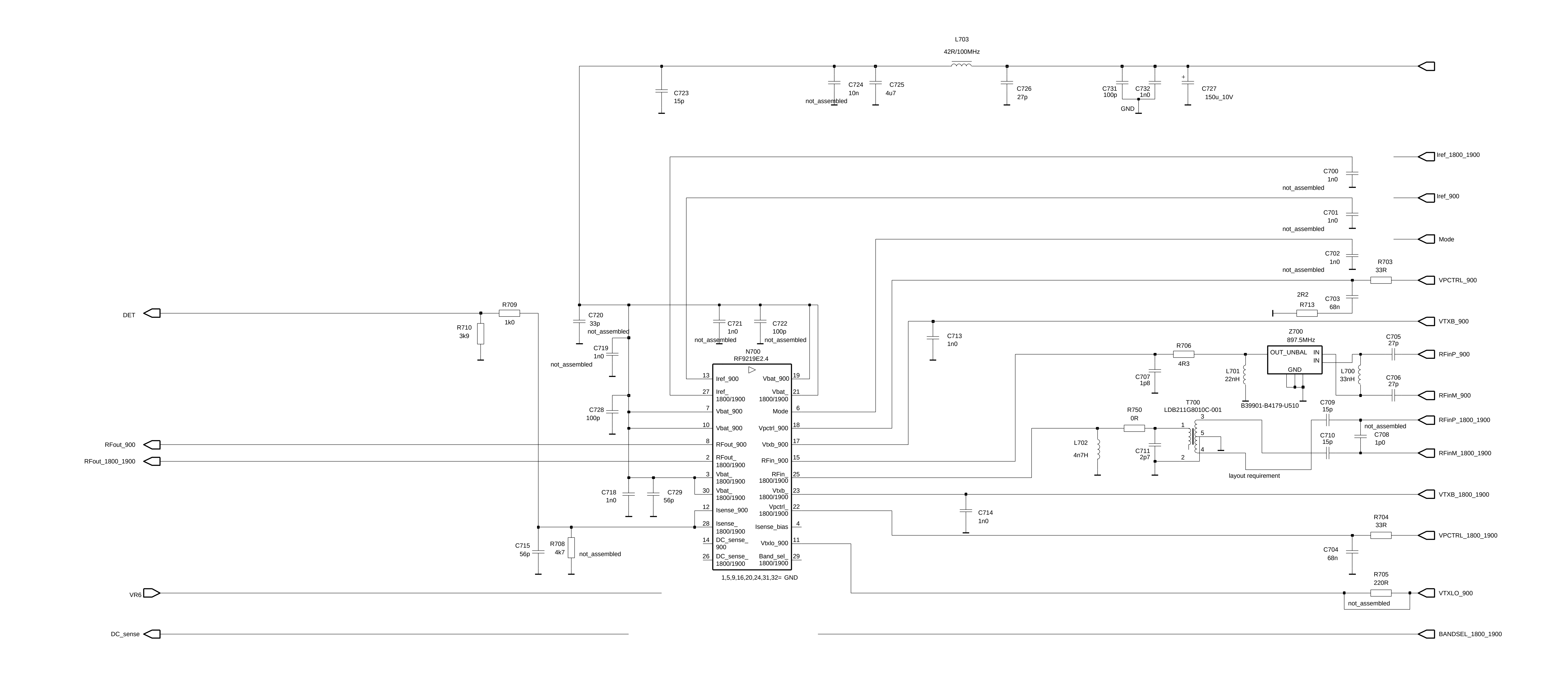


**RX Front End and Antenna Switch (ver. 0.0 ed.2 )**

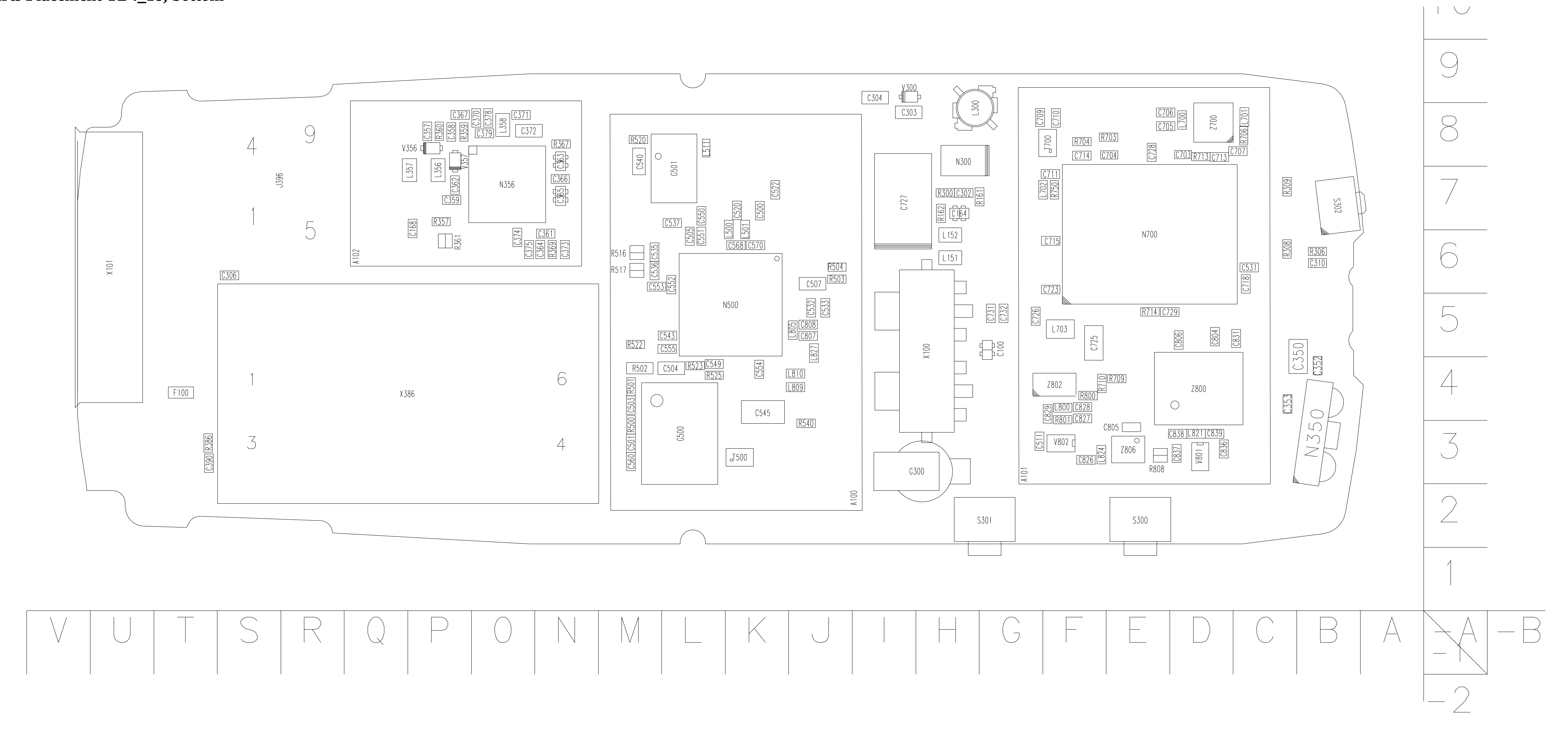


**Power amplifier detection (ver. 0.2 ed. 3)**

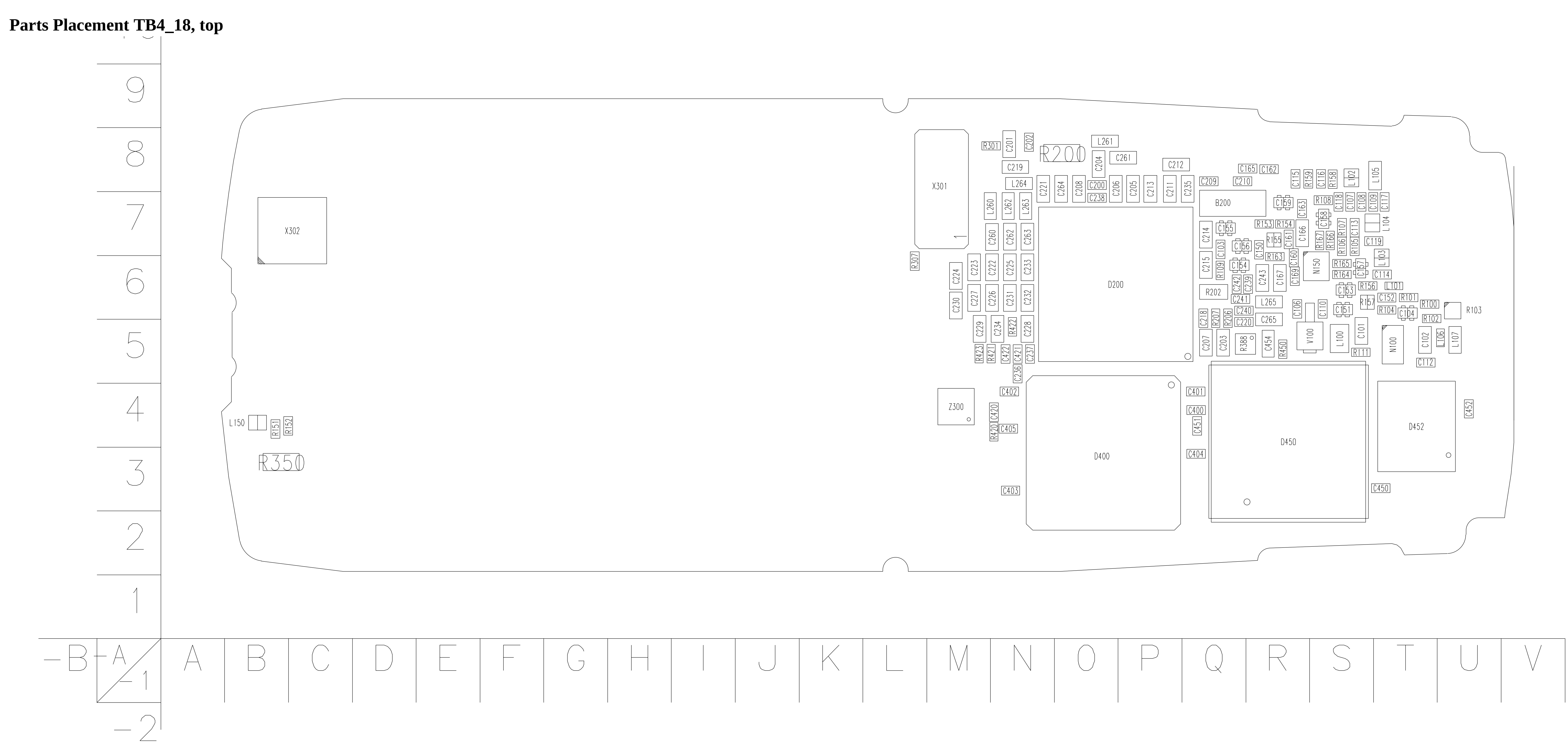


**Parts Placement TB4_18, bottom**

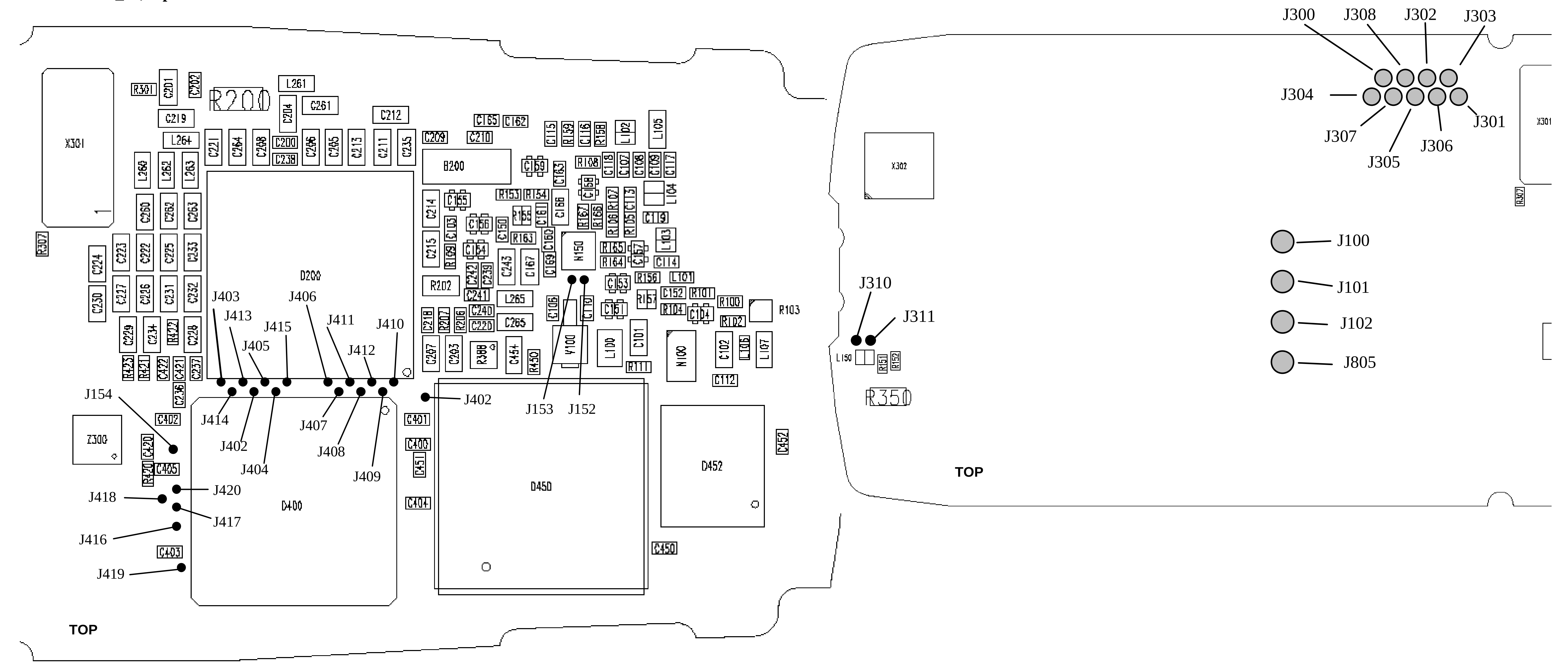


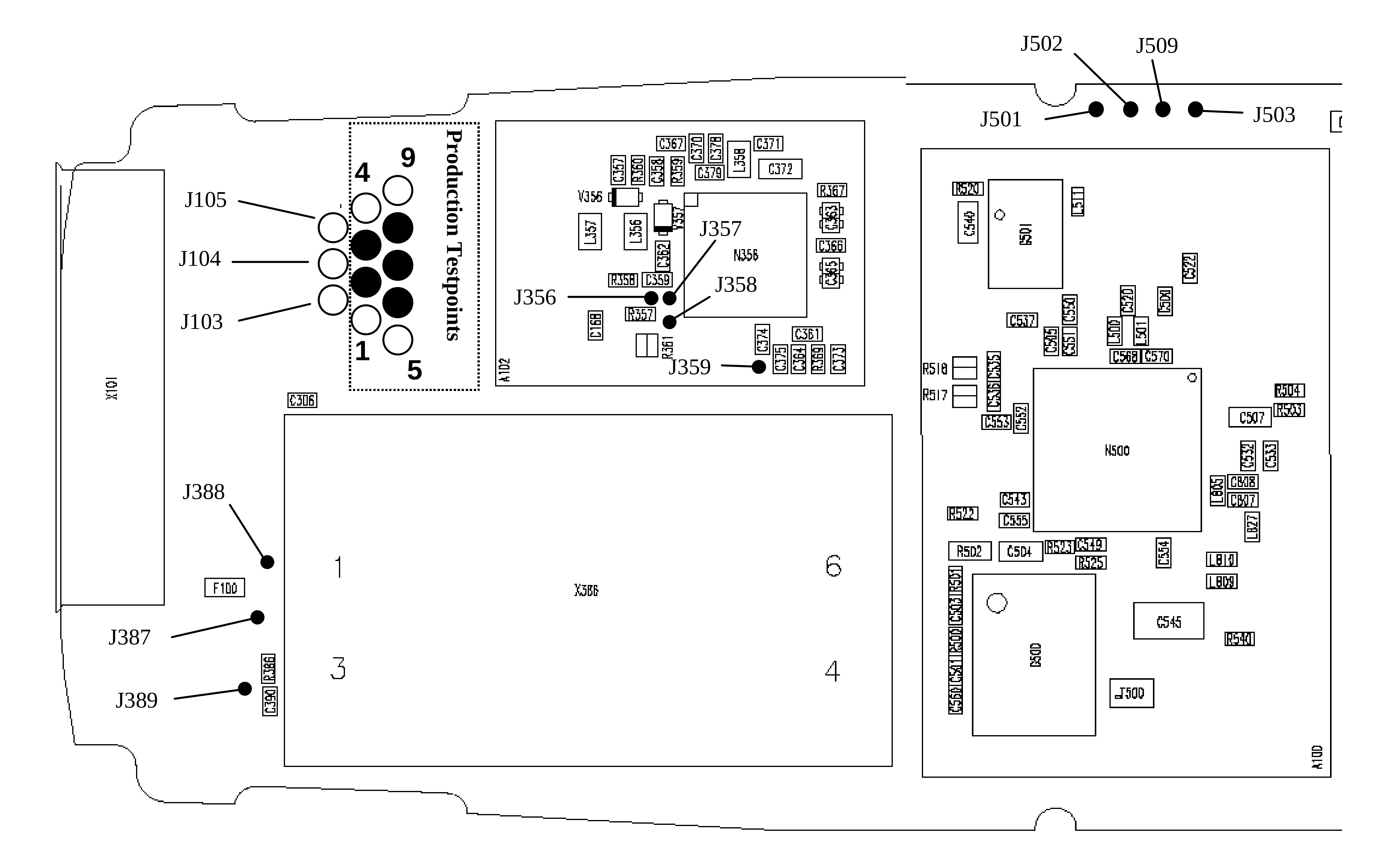
**Parts Placement TB4_18, top**



**Test Points TB4_18, top side**



**Test Points TB4_18, bottom side**



**List of Test Points**

**Test Points**

| Signal | Test point | Function | Characteristics | Note | Signal | Test point | Function | Characteristics | Note |
|---|---|---|---|---|---|---|---|---|---|
| STISClk | PRODTP1 | STI serial clock | Digital signal 1.8 V | | FMWrEn | J358 | FM-radio write enable | Digital signal 1.8 V | From UPP to FM-radio |
| FBUSTXO | PRODTP2 | Flash programming data and phone control | 2.78V digital signal | From phone to FPS-8/ PC | FMClk | J359 | Reference clock for FM-radio, 32 kHz | Digital signal 1.8 V | From UPP to FM-radio |
| FBUSRXO | PRODTP3 | Flash programming data and phone control | 2.78V digital signal | From FPS-8/PC to phone | SIMDATA | J386 | SIM data | Digital signal 1.8 / 3V | From / to UEM / SIM card |
| STITxD | PRODTP4 | STI data (Tx) | Digital signal 1.8 V | | SIMRST | J387 | SIM reset | Digital signal 1.8 / 3V | From UEM to SIM card |
| STIRxD | PRODTP5 | STI data (Rx) | Digital signal 1.8 V | | SIMCLK | J388 | SIM clock | 3.25MHz digital clock signal 1.8 / 3V | From UEM to SIM card |
| VPP | PRODTP6 | Flash programming voltage | 1.8V internal voltage<br>12V external voltage | | VSIM | J389 | Power supply for SIM card | 1.8V or 3V | Depends on the SIM card |
| MBUS | PRODTP7 | Flash programming clock and phone control | 2.78V digital signal<br>6.5 MHz max. | Bi-directional phone control | PURX | J402 | Power up reset | 1.8V digital signal | From UEM to UPP |
| GND | PRODTP8 | Ground | | | SLEEPX | J403 | Sleep mode control signal | 1.8V when not in sleep<br>0V when in sleep mode | |
| NC | PRODTP9 | | | Not used | SLEEPCLK (40) | J404 | Sleep mode timing clock | 32.768kHz digital clock 1.8V | |
| VBATT (10) | J100 | Battery voltage | | | UEMINT | J405 | Interrupt request for UPP | 1.8V digital signal | From UEM to UPP |
| BSI | J101 | Battery size indicator<br>Local mode indicator<br>SIM removal indicator<br>Flash programming start signal | 1V in normal mode<br>0V in local mode<br>If BSI line rises > 2.1V<br>2.78V BSI pulse | To UEM A/D converter | CBUSCLK | J406 | Serial control bus clock | 1MHz digital clock signal 1.8V | From UPP (MCU) to UEM<br>Controlled by MCU |
| BTEMP | J102 | Battery temp. Indicator<br>Test mode indicator | About 0.8V at 25°C<br>0V in test mode | | CBUSDA | J407 | Serial control bus data input/output | 1.8V digital signal | Between UPP (MCU) and UEM<br>Controlled by MCU |
| HSEAR L | J103 | FM radio audio L | | Production testpoint | CBUSENX | J408 | CBUS enable signal | 1.8V digital signal | From UPP (MCU) to UEM<br>Controlled by MCU |
| HSEAR R | J104 | FM radio audio R | | Production testpoint | MBUSTX | J409 | MBUS from UPP to UEM | 1.8V digital signal | |
| FMANT | J105 | FM radio antenna | | Production testpoint | MBUSRX | J410 | MBUS from UEM to UPP | 1.8V digital signal | |
| ENB | J152 | Audio amplifier enable | Digital signal 1.8 V | From UPP to amplifier | FBUSTX | J411 | FBUS from UPP to UEM | 1.8V digital signal | |
| CLK | J153 | Audio amplifier serial clock | Digital signal 1.8 V | From UPP to amplifier | FBUSRX | J412 | FBUS from UEM to UPP | 1.8V digital signal | |
| DATA | J154 | Audio amplifier data | Digital signal 1.8 V | From UPP to amplifier | DBUSCLK | J413 | DBUS clock | 13MHz digital clock signal 1.8V | From UPP (DSP) to UEM<br>Generated by UPP |
| VFLASH1 | J300 | Supply voltage to LCD | 2.78 V | From UEM to LCD | DBUSDA (50) | J414 | DBUS data input/output | 1.8V digital signal | Between UEM and UPP (DSP) |
| VIO (20) | J301 | Supply voltage to LCD (IO) | 1.8 V | From UEM to LCD | DBUSEN1X | J415 | DBUS selection and enable | 1.8V digital signal | From UPP (DSP) to UEM |

**Test Points**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| VLED- | J302 | LED driver feedback | ~0.5V | From LCD to LED driver | EXTWRX | J416 | Flash memory write enable | 1.8V digital signal | |
| VLED+ | J303 | LED driver output voltage | ~7.5V V | From LED driver to LCD | EXTRDX | J417 | Flash memory read enable | 1.8V digital signal | |
| CSX | J304 | LCD Chip select | Digital signal 1.8 V | From UPP to LCD | FLS2CSX | J418 | 2ndFlash memory chip select | 1.8V digital signal | Not used |
| SDA | J305 | LCD Serial Data | Digital signal 1.8 V | From UPP to LCD | FLSCLK | J419 | Flash memory clock | 35MHz digital clock signal 1.8V | In burst mode |
| RESX | J306 | LCD Reset | Digital signal 1.8 V | From UPP to LCD | FLSCSX | J420 | Flash memory chip select | 1.8V digital signal | |
| SCLK | J307 | LCD Serial Clock | Digital signal1.8 V 6.5 MHz | From UPP to LCD | RFBUSCLK | J501 | HELGA control clock | 13MHz digital clock signal 1.8V | From UPP to HELGA |
| GND | J308 | Ground (for module jig) | | | RFBUSEN1 | J502 | HELGA chip select | 1.8V digital signal | From UPP to HELGA |
| EARP | J310 | Earpiece line (positive) | Audio signal (differential) | From UEM to Earpiece | RFBUSRST | J503 | HELGA Reset | 1.8V digital signal | From UPP to HELGA |
| EARN | J311 | Earpiece line (negative) | Audio signal (differential) | From UEM to Earpiece | RFBUSDATA (60) | J509 | HELGA control serial data | 1.8V digital signal | From UPP to HELGA |
| FMCtrlDa (30) | J356 | FM-radio serial data | Digital signal 1.8 V | From UPP to FM-radio | GND | J805 | Ground (for module jig) | | |
| FMCtrl-Clk | J357 | FM-radio serial clock | Digital signal 1.8 V | From UPP to FM-radio | FMWrEn | J358 | FM-radio write enable | Digital signal 1.8 V | From UPP to FM-radio |
| GND | J308 | Ground (for module jig) | | | FMClk | J359 | Reference clock for FM-radio, 32 kHz | Digital signal 1.8 V | From UPP to FM-radio |
| EARP | J310 | Earpiece line (positive) | Audio signal (differential) | From UEM to Earpiece | SIMDATA | J386 | SIM data | Digital signal 1.8 / 3V | From / to UEM / SIM card |
| EARN | J311 | Earpiece line (negative) | Audio signal (differential) | From UEM to Earpiece | SIMRST | J387 | SIM reset | Digital signal 1.8 / 3V | From UEM to SIM card |
| FMCtrlDa (30) | J356 | FM-radio serial data | Digital signal 1.8 V | From UPP to FM-radio | SIMCLK | J388 | SIM clock | 3.25MHz digital clock signal 1.8 / 3V | From UEM to SIM card |
| FMCtrl-Clk | J357 | FM-radio serial clock | Digital signal 1.8 V | From UPP to FM-radio | VSIM | J389 | Power supply for SIM card | 1.8V or 3V | Depends on the SIM card |